AMENDMENTS TO THE CLAIMS

This listing of Claims will replace all prior versions, and listings of Claims in the application.

Claims 1-12 (Canceled)

13. (New) A method for producing electric power at a certain AC voltage from at least one multicell battery of elementary DC source cells electrically connected in series, comprising:

establishing a plurality of N intermediate voltage taps along the elementary DC source cells electrically connected in series such that a number of the elementary DC source cells between a certain intermediate tap and one of another adjacent intermediate tap and a terminal of the elementary DC source cells electrically connected in series is proportionate to an amplitude in a respective phase interval of a number N of discretization phases of an AC voltage waveform to be produced in a quadrant;

providing a number N of power switches, each connecting a respective intermediate tap and a first terminal of the elementary DC source cells electrically connected in series to a common circuit node of a first polarity;

coupling said common circuit node of first polarity and the other terminal of the elementary DC source cells electrically connected in series of polarity opposed to said first polarity, to respective nodes of an output bridge stage constituted by at least four power switches controlled in pairs, the other two nodes of the bridge stage constituting the AC voltage power output;

switching sequentially and cyclically in a continuous manner one switch at a time of the N power switches, each for a time interval corresponding to 1/(4N) times a period of the AC output voltage and switching current paths through the bridge stage every half a period.

14. (New) The method according to claim 13, wherein the number of elementary DC source cells that are included in a circuit by selecting a certain intermediate tap that corresponds to a respective value of a sine function in the respective phase interval of the N discretization phases in which each quadrant is subdivided.

15. (New) The method according to claim 13, wherein said elementary DC source cells electrically connected in series belong to N multicell batteries each constituted by a number of elementary DC source cells electrically connected in series that varies according to said correspondence.

16. (New) A static inverter for at least one multicell DC source battery of elementary DC source cells electrically connected in series and including a number N of intermediate voltage taps along the elementary DC source cells electrically connected in series, comprising:

a number of elementary DC source cells between an intermediate tap and one of another adjacent intermediate tap and an end terminal of said number of elementary DC source cells is proportionate to an amplitude in a respective phase interval of a number N of discretization phases of a waveform of the AC voltage to be output in a quadrant; and comprising:

a number N of power switches each connecting a respective intermediate tap and a first end terminal of a first polarity of said chain of elementary DC source cells electrically connected in series to a common circuit node of said first polarity;

an output bridge stage constituted by at least four power switches controlled in pairs for switching current paths through the output bridge stage, having a first pair of nodes coupled to said common circuit node of said first plurality and to the other end terminal of polarity opposite to said first polarity of said elementary DC source cells electrically connected in series, respectively, and a second pair of nodes constituting an AC output;

a control circuit sequentially and cyclically turning on, in a continuous manner, one switch at a time of said N power switches; each for a phase interval of l/(4N) times a period of said AC output, and alternately turning on by pairs said at least four power switches of said output bridge stage at every half a period of said AC output.

17. (New) The inverter according to claim 16, wherein the number of elementary DC source cells that are included in a circuit by selecting a certain intermediate voltage tap is proportionate to a value of a sine function in the respective phase interval of the N discretization phases in which each quadrant is subdivided.

18. (New) The inverter according to claim 17, wherein said elementary DC source cells electrically connected in series belong to a plurality of multicell batteries, each constituted by a number of elementary DC source cells electrically connected in series that varies according to said correspondence.

19. (New) The inverter according to claim 16, wherein said control circuit comprises at least N+4 driving buffers of respective wires of a first N-wire control bus of said N power switches and a second four-wires control bus of said at least four power switches of said output bridge stage.

20. (New) The inverter according to claim 19, wherein said driving buffers are controlled via software.

21. (New) The inverter according to claim 19, wherein said control circuit comprises:

a clock generator for discretizing a desired waveform by timing the N phase switchings in each quadrant of a period of an established AC output frequency; and

at least an up-down counter for synchronizing an instant of switching output current paths through the output bridge stage at the end of each half a period.

22. (New) A system for powering electric loads at a certain AC voltage from a solar energy conversion system comprising:

at least one photovoltaic panel;

at least one redox flow battery for storing energy comprising a plurality of elementary DC source cells electrically connected in series and having a number N of intermediate voltage taps along a number of DC source cells composed of said elementary the elementary DC source cells electrically connected in series; and

an inverter for outputting electric power at said AC voltage, wherein

the number of elementary DC source cells comprised between an intermediate tap and another adjacent intermediate tap or an end terminal of elementary DC source cells electrically connected in series is proportionate to an amplitude in a respective phase interval of a number N of discretization phases of a waveform of the AC voltage to be output in a quadrant; and comprising

a number N of power switches each connecting a respective intermediate tap and a first end terminal of a first polarity of said number of elementary DC source cells electrically connected in series to a common circuit node of said first polarity;

an output bridge stage constituted by at least four power switches controlled in pairs for switching current paths through the output bridge stage, having a first pair of nodes coupled to said common circuit node of said first polarity and to the other end terminal of polarity opposite to said first polarity of said chain of elementary DC source cells electrically connected in series, respectively, and a second pair of nodes constituting an AC output;

a control circuit sequentially and cyclically turning on, in a continuous manner, one switch at a time of said N power switches; each for a phase interval of 1/(4N) times the period of said AC output, and alternately turning on by pairs said at least four power switches of said output bridge stage at every half a period.